



PATENT

Attorney Docket No.: 186563/US/2

Attorney File No.: 469390-00352

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

SHENOY *et al.*

U.S. Serial No. 10/543,122

Filing Date: July 21, 2005

I.A. App. No.: PCT/US04/02029

I.A. Filing Date: January 26, 2004

For: *Modified Trafficking Patterns For
Arrestin and G-Protein-Coupled
Receptors via Arrestin-Ubiquitin
Chimera*

Examiner: Not Yet Assigned

Art Unit: Not Yet Assigned

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Dated: June 15, 2006

Signed: Brent Yorlchara

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, Applicants wish to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying form PTO/SB/8A. In accordance with 1287 Off. Gaz. Pat. Office 163 (October 19, 2004), no copies of U.S. patents and U.S. published applications are enclosed. Copies of foreign patents and non-patent literature, unless indicated otherwise below, are enclosed.

Nothing herein shall constitute an admission concerning the contents of any of the cited references, nor shall the inclusion of a reference herein be considered an admission that the reference constitutes prior art against the invention claimed in the above-identified application. Submission of the

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present document shall not be construed as an admission that a search has been made or that better art does not exist.

As far as is known to the undersigned, this Information Disclosure Statement is being filed within three months of the filing date of a national application, within three months of the date of entry of the national state in an international application, or before the mailing date of a first Office Action on the merits as set forth in 37 C.F.R. § 1.97(b), and therefore no fee is required. While no fee is believed to be due, if this belief is in error, the Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-2319 (Our Order No. 469390-00352; Docket No.: 186563/US/2).

Respectfully submitted,
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Michael F. Kolman, Reg. No. 54,234 for
David J. Brezner, Reg. No. 24,774

Attachments: Form PTO/SB/08A, substitute for Form PTO-1449
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Substitute for form 1449A/PTO (Modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	10/543,122
				Filing Date	January 26, 2004
				First Named Inventor	SHENOY, Sudha
				Art Unit	To be assigned
				Examiner Name	To be assigned
Sheet	1	of	3	Attorney Docket Number	186563/US/2 (469390-00352)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US-3,654,090	04-04-1972	Schuurs	
	A2	US-3,850,752	11-26-1974	Schuurs et al.	
	A3	US-4,016,043	04-05-1977	Schuurs et al.	
	A4	US-4,341,761	07-27-1982	Ganfield et al.	
	A5	US-4,399,121	08-16-1983	Albarella et al.	
	A6	US-4,427,783	01-24-1984	Newman et al.	
	A7	US-4,444,887	04-24-1984	Hoffmann	
	A8	US-4,451,570	05-29-1984	Royston et al.	
	A9	US-4,466,917	08-02-1984	Nussenzweig et al.	
	A10	US-4,472,500	09-18-1984	Milstein et al.	
	A11	US-4,491,632	01-01-1985	Wands et al.	
	A12	US-4,493,795	01-15-1985	Nestor et al.	
	A13	US-4,493,890	01-15-1985	Morris	
	A14	US-5,625,048	04-29-1997	Tsien et al.	
	A15	US-5,777,079	07-07-1998	Tsien et al.	
	A16	US-5,891,646	04-06-1999	Barak et al.	
	A17	US-6,066,476	05-23-1990	Tsien et al.	
	A18	US-6,110,693	08-29-2000	Barak et al.	
	A19	US-RE 31,006	08-03-1982	Schuurs et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ² Number ³ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	B1					

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	C1	ANGERS, S., et al., "Detection β_2 -adrenergic receptor dimerization in living cells using bioluminescence resonance energy transfer (BRET)," <i>Proc. Natl. Acad. Sci. USA</i> 97(7):3684-3689 (Mar. 2000).	

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				Art Unit	To be assigned
				Examiner Name	To be assigned
Sheet	2	of	3	Attorney Docket Number	186563/US/2 (469390-00352)

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Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	C2	CLAING, A., et al., "β-Arrestin-mediated ADP-ribosylation factor 6 activation and β ₂ -adrenergic receptor endocytosis," <i>J. Biol. Chem.</i> 276(45):42509-42513 (Nov. 2001) (first pub'd online 08/30/2001).	
	C3	CONG, M., et al., "Binding of the β ₂ adrenergic receptor to N-ethylmaleimide-sensitive factor regulates receptor recycling," <i>J. Biol. Chem.</i> 276(48):45145-45152 (Nov. 2001) (first pub'd online 09/27/2001).	
	C4	EDGE, M., et al., "Total synthesis of a human leukocyte interferon gene," <i>Nature</i> 292(5825):756-762 (Aug. 1981).	
	C5	GOVERS, R., et al., "Identification of a novel ubiquitin conjugation motif, required for ligand-induced internalization of the growth hormone receptor," <i>EMBO J.</i> 18(1):28-36 (Jan. 1999).	
	C6	HERSHKO, A., et al., "The ubiquitin system," <i>Annu. Rev. Biochem.</i> 67:425-479 (1998).	
	C7	HICKE, L., et al., "Ubiquitination of a yeast plasma membrane receptor signals its ligand-stimulated endocytosis," <i>Cell</i> 84(2):277-287 (Jan. 1996).	
	C8	JAY, E., et al., "Chemical synthesis of a biologically active gene for human immune interferon-γ. Prospect for site-specific mutagenesis and structure- function studies," <i>J. Biol. Chem.</i> 259(10):6311-6317 (May 1984).	
	C9	KRUPNICK, J., et al., "Arrestin/clathrin interaction. Localization of the clathrin binding domain of nonvisual arrestins to the carboxy terminus," <i>J. Biol. Chem.</i> 272(23):15011-15016 (Jun. 1997).	
	C10	LAPORTE, S., et al., "The β ₂ -adrenergic receptor/βarrestin complex recruits the clathrin adaptor AP-2 during endocytosis," <i>Proc. Natl. Acad. Sci. USA</i> 96(7):3712-3717 (Mar. 1999).	
	C11	LEFKOVITZ, R., "G protein-coupled receptors. III. New roles for receptor kinases and β-arrestins in receptor signaling and desensitization," <i>J. Biol. Chem.</i> 273(30):18677-18680 (Jul. 1998).	
	C12	LUTTRELL, L., et al., "β-arrestin-dependent formation of β ₂ adrenergic receptor-Src protein kinase complexes," <i>Science</i> 283(5402):655-661 (Jan. 1999).	
	C13	LUTTRELL, L., et al., "Activation and targeting of extracellular signal-regulated kinases by β-arrestin scaffolds," <i>Proc. Natl. Acad. Sci. USA</i> 98(5):2449-2454 (Feb. 2001) (first pub'd online 02/20/2001).	
	C14	MORI, S., et al., "Identification of an ubiquitin-ligation system for the epidermal-growth-factor receptor—herbimycin A induces <i>in vitro</i> ubiquitination in rabbit-reticulocyte lysate," <i>Eur. J. Biochem.</i> 247(3):1190-1196 (Aug. 1997).	
	C15	MORI, S., et al., "Degradation process of ligand-stimulated platelet-derived growth factor β-receptor involves ubiquitin-proteasome proteolytic pathway," <i>J. Biol. Chem.</i> 270(49):29447-29452 (Dec. 1995).	
	C16	NAMBIAR, K., et al., "Total synthesis and cloning of a gene coding for the ribonuclease S protein," <i>Science</i> 223(4642):1299 (Mar. 1984).	
	C17	NIMAN, H., et al., "Generation of protein-reactive antibodies by short peptides is an event of high frequency: implications for the structural basis of immune recognition," <i>Proc. Natl. Acad. Sci. USA</i> 80(16):4949-4953 (Aug. 1983).	
	C18	NOREN, C., et al., "A general method for site-specific incorporation of unnatural amino acids into proteins," <i>Science</i> 244(4901):182-188 (Apr. 1989).	
	C19	OAKLEY, R., et al., "Differential affinities of visual arrestin, βarrestin1, and βarrestin2 for G protein-coupled receptors delineate two major classes of receptors," <i>J. Biol. Chem.</i> 275(22):17201-17210 (Jun. 2000).	

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	C20	OAKLEY, R., et al., "Molecular determinants underlying the formation of stable intracellular G protein-coupled receptor-β-arrestin complexes after receptor endocytosis," <i>J. Biol. Chem.</i> 276(22):19452-19460 (Jun. 2001) (first pub'd online 03/09/2001).		
	C21	PERRY, S., et al., "Arresting developments in heptahelical receptor signaling and regulation," <i>Trends Cell Biol.</i> 12(3):130-138 (Mar. 2002).		
	C22	PHONPHOK, Y., et al., "Stabilization of clathrin coated vesicles by amantadine, tromantadine and other hydrophobic amines," <i>FEBS Lett.</i> 281(1-2):188-190 (Apr. 1991).		
	C23	ROTH, A., et al., "Ubiquitination of the yeast a-factor receptor," <i>J. Cell. Biol.</i> 134(3):661-674 (Aug. 1996).		
	C24	SHENOY, S., et al., "Regulation of receptor fate by ubiquitination of activated beta 2-adrenergic receptor and beta-arrestin," <i>Science</i> 294(5545):1307-1313 (Mar. 2001) (first pub'd online 10/04/2001).		
	C25	TOHGO, A., et al., "β-Arrestin scaffolding of the ERK cascade enhances cytosolic ERK activity but inhibits ERK-mediated transcription following angiotensin AT1a receptor stimulation," <i>J. Biol. Chem.</i> 277(11):9429-9436 (Mar. 2002) (first pub'd online 01/02/2002).		
	C26	WANG, C., et al., "TAK1 is a ubiquitin-dependent kinase of MKK and IKK," <i>Nature</i> 412(6844):346-351 (Jul. 2001).		
	C27	WANG, Y., et al., "Down-regulation of protease-activated receptor-1 is regulated by sorting nexin 1," <i>Mol. Biol. Cell</i> 13(6):1965-1976 (Jun. 2002).		
	C28	ZHENG, B., et al., "RGS-PX1, a GAP for Gα _s and sorting nexin in vesicular," <i>Science</i> 294(5548):1939-1942 (Nov. 2001).		

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